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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project	Date	Author

TITLE

INDIVIDUAL TREE MEASUREMENTS AND DESCRIPTIONS -- APPENDIX TO STUDIES OF PHYSICAL CHARACTERISTCS OF HIGH AND LOW RISK PONDEROSA PINES, BLACK'S MOUNTAIN EXPERIMENTAL FOREST

SEASON OF 1941

By
N. D. Wygant
Berkeley, California
May, 1942

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FILE No.

Refer to:	Noted by:
	FPK
Baker	Jacobs
Hall	Reed
Bedard	WDW

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
WASHINGTON, D. C.

208 Forestry Bldg., C.S.C.,
Fort Collins, Colorado
March 17, 1943

To: F. P. Keen, In Charge, Berkeley Laboratory

From: N. D. Wygant, Fort Collins, Colorado

Subject: Field Notes

The original notes and summary notes of the study that was made at Black's Mountain Experimental Forest during the summer of 1941 on the physical characteristics of high and low risk ponderosa pines are being sent under separate cover. Hall and Bongberg may have occasion to refer to them in future studies that are made. There are a number of negatives and prints which you may or may not wish to incorporate into the photographic file. The notes are grouped according to their content with a note attached to each explaining their nature.

N. D. Wygant

P.S. Since I probably would not be able to carry out extensive tests with the neoprene blanket, it is just as well that Cassidy got it for ant control tests. I understand that neoprene is expensive and therefore would not be practical for mountain pine beetle control.

NDW

average

TREE NO. Risk 1

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	197.4	188.1	173.9
Average length of needles in inches	6.22	6.47	6.56
Average diameter of needle bundle in mm.	1.87	1.86	1.80
Average diameter of twigs in cm.	1.52	1.38	1.32
Average annual twig growth in inches, 1917-41	.80	.72	.70
Average annual radial stem growth in inches, 1912-1941	.0128	.0211	.0144

Total age at stump _____ Foliage injury in percent _____

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class _____ Dunning Class _____ Keen Class _____

Dominance _____ Age _____ Crown Length _____

Crown Symmetry _____ Crown Width _____ Top Shape _____

Appearance _____ Needle Color _____

Crown Density: Top _____ Mid _____

Needle Length: Top _____ Mid _____

Twig Injury _____ Branch Injury _____

Remarks: _____

TREE NO. 1039

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	233.6	265.1	187.0
Average length of needles in inches	6.96	6.99	6.18
Average diameter of needle bundle in mm.	1.67	1.76	1.62
Average diameter of twigs in cm.	1.51	1.54	1.22
Average annual twig growth in inches, 1917-41	1.04	1.09	.72
Average annual radial stem growth in inches, 1912-1941	—	.0187	.0282

Total age at stump 209+ Foliage injury in percent _____

DBH 34" Height 123' Crown Length 77'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

Appearance excellent Needle Color dark

Crown Density: Top dense Mid dense

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: Fire scar on north 1/3 of stump.

Photo No 60

TREE NO. 1057

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	246.4	230.0	191.6
Average length of needles in inches	6.81	7.20	7.07
Average diameter of needle bundle in mm.	1.99	2.01	1.90
Average diameter of twigs in cm.	1.74	1.57	1.40
Average annual twig growth in inches, 1917-41	.86	.77	.68
Average annual radial stem growth in inches, 1912-1941	.0070	.0158	.0150

Total age at stump 502 Foliage injury in percent _____

DBH 36" Height 115' Crown Length 69'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5 Keen Class 4B

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical Crown Width wide Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top dense Mid dense

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: _____

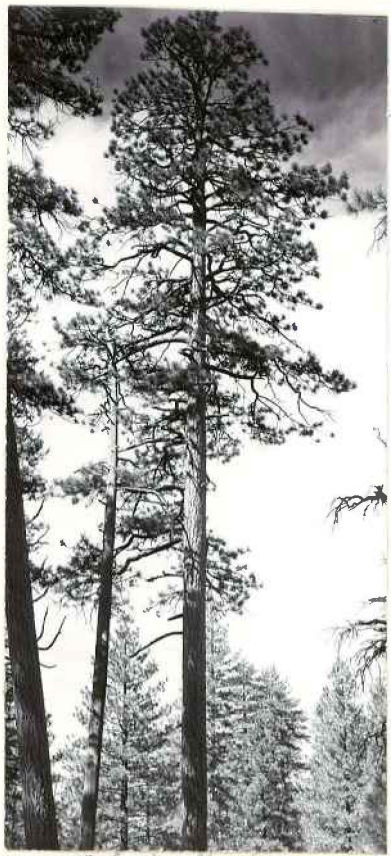


Photo # 6)

TREE NO. 1060

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	124.8	142.6	159.0
Average length of needles in inches	5.70	6.19	6.43
Average diameter of needle bundle in mm.	1.81	1.81	1.85
Average diameter of twigs in cm.	1.33	1.17	1.30
Average annual twig growth in inches, 1917-41	.57	.53	.65
Average annual radial stem growth in inches, 1912-1941	.0102	.0098	.0064

Total age at stump 5-60+ Foliage injury in percent _____

DBH 38" Height + 94' Crown Length 51'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5 Keen Class 4c

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry irregular Crown Width medium Top Shape flat

Appearance good Needle Color light

Crown Density: Top medium Mid medium

Needle Length: Top medium Mid medium

Twig Injury light Branch Injury light

Remarks: a few current flathead exposure galleries in upper bole. Twigs show rough bark and pitchy lesions in some cases. Tree appears to have a rotten heart from top to butt.

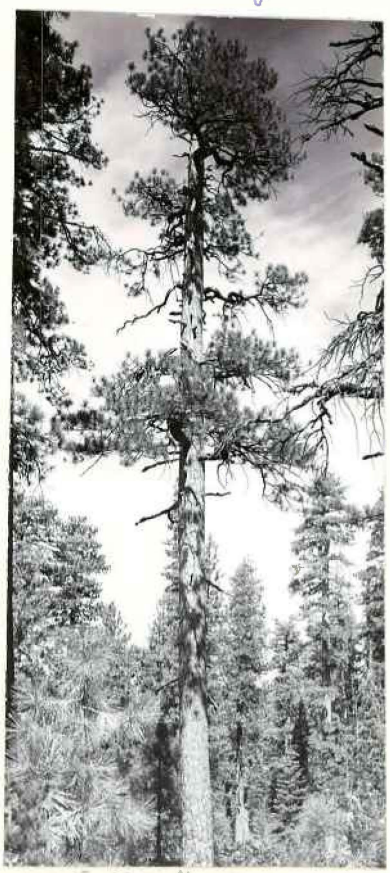


Photo # 62

TREE NO. 1103

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	221.7	201.8	174.0
Average length of needles in inches	6.09	5.96	6.51
Average diameter of needle bundle in mm.	1.87	1.87	1.84
Average diameter of twigs in cm.	1.46	1.43	1.36
Average annual twig growth in inches, 1917-41	.56	.60	.64
Average annual radial stem growth in inches, 1912-1941	.0078	.0219	.0103

Total age at stump 350 (est.) Foliage injury in percent _____

DBH 36" Height 118' Crown Length 84'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

4A

Risk Class 1 Dunning Class 3 Keen Class 3A

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical Crown Width wide Top Shape flat

Photo no 66

Appearance excellent Needle Color dark

Crown Density: Top dense Mid dense

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks:

TREE NO. 1106

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	154.4	163.8	159.6
Average length of needles in inches	6.46	6.60	6.46
Average diameter of needle bundle in mm.	2.04	2.00	1.83
Average diameter of twigs in cm.	1.71	1.43	1.41
Average annual twig growth in inches, 1917-41	.92	.68	.80
Average annual radial stem growth in inches, 1912-1941	.0111	.0168	.0160

Total age at stump 350 estimated Foliage injury in percent _____

DBH 34" Height 103' Crown Length 68'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5 Keen Class 4B

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry symmetrical Crown Width wide Top Shape flat

Appearance good Needle Color light

Crown Density: Top medium Mid medium

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: _____

photo no. 84

TREE NO. 1135

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	178.2	189.0	172.6
Average length of needles in inches	5.71	6.21	6.46
Average diameter of needle bundle in mm.	1.93	1.91	1.84
Average diameter of twigs in cm.	1.68	1.46	1.38
Average annual twig growth in inches, 1917-41	.67	.62	.54
Average annual radial stem growth in inches, 1912-1941	.0130	.0161	.0095

Total age at stump 492 Foliage injury in percent _____

DBH 27.4 Height 106' Crown Length 68'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5 Keen Class 4B

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry symmetrical Crown Width medium Top Shape flat

Appearance good Needle Color dark

Crown Density: Top dense Mid dense

Needle Length: Top long Mid long

Twig Injury light Branch Injury none

Remarks: _____

Photo No. 67

TREE NO. 1443

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	128.8	136.0	174.2
Average length of needles in inches	5.06	5.77	6.79
Average diameter of needle bundle in mm.	1.77	1.80	1.83
Average diameter of twigs in cm.	1.24	1.17	1.22
Average annual twig growth in inches, 1917-41	.49	.49	.63
Average annual radial stem growth in inches, 1912-1941	.0161	.0194	.0183

Total age at stump 293 Foliage injury in percent _____

DBH 38" Height 111'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical Crown Width wide Top Shape rounded

Appearance good Needle Color light

Crown Density: Top medium Mid medium

Needle Length: Top medium Mid medium

Twig Injury none Branch Injury none

Remarks: much old terminal killing and deformation of twigs

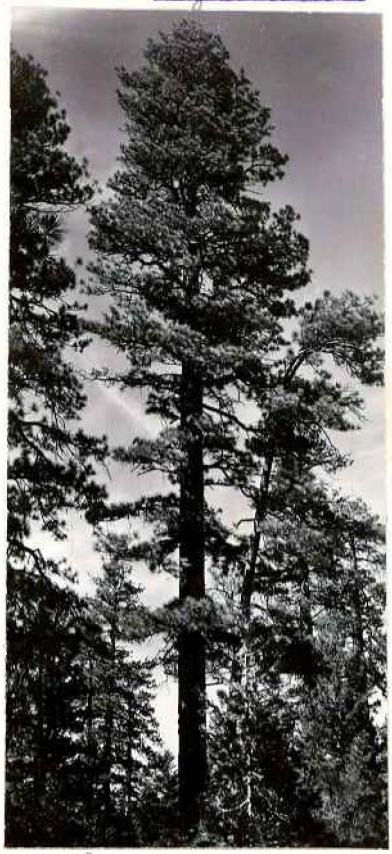


Photo No. 73

W73

TREE NO 1466

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	292.2	276.0	254.0
Average length of needles in inches	6.98	7.16	7.52
Average diameter of needle bundle in mm.	1.89	1.89	1.86
Average diameter of twigs in cm.	1.56	1.67	1.83
Average annual twig growth in inches, 1917-41	.94	.94	1.01
Average annual radial stem growth in inches, 1912-1941	.0151	.0354	.0184

Total age at stump 278 Foliage injury in percent _____

DBH 38" Height 112'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical Crown Width wide Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top dense to medium Mid dense to medium

Needle Length: Top medium Mid long

Twig Injury light Branch Injury none

Remarks: Heavy old growth dense, [illegible]

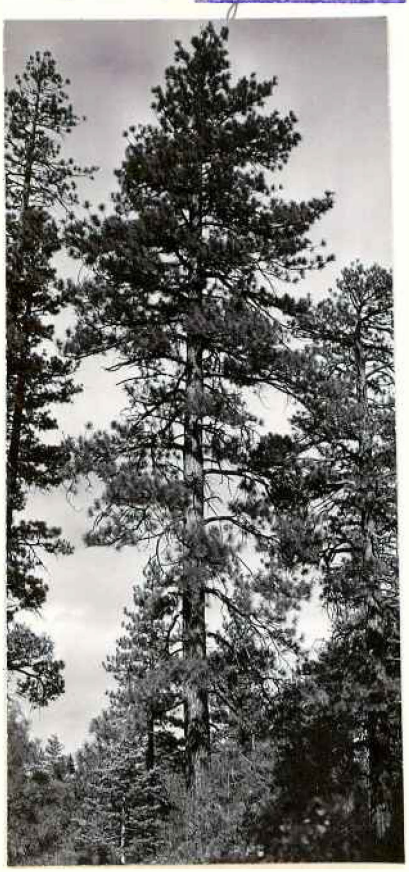


Photo No. 80

W80

TREE NO. 1475

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	139.2	133.2	137.0
Average length of needles in inches	6.36	6.43	6.77
Average diameter of needle bundle in mm.	2.00	2.03	1.96
Average diameter of twigs in cm.	1.54	1.52	1.38
Average annual twig growth in inches, 1917-41	.74	.70	.65
Average annual radial stem growth in inches, 1912-1941	.0093	.0268	.0136

Total age at stump 333 Foliage injury in percent _____

DBH 36" Height 112'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry asymmetrical Crown Width wide Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top medium Mid medium

Needle Length: Top long to medium Mid medium

Twig Injury light Branch Injury light

Remarks: about 50 percent of tips injured by pitch mid the top crown.

Photo no. 79

TREE NO. 1517

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	252.9	150.4	164.8
Average length of needles in inches	6.21	5.94	6.33
Average diameter of needle bundle in mm.	1.99	1.76	1.74
Average diameter of twigs in cm.	1.77	1.22	1.14
Average annual twig growth in inches, 1917-41	1.41	.78	.75
Average annual radial stem growth in inches, 1912-1941	.0219	.0353	.0171

Total age at stump 277 Foliage injury in percent _____

DBH 24" Height 81'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 3 Keen Class 3A B

Dominance dominant Age mature Crown Length 1/2

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top dense Mid dense

Needle Length: Top medium Mid medium

Twig Injury none Branch Injury none

Remarks:

Photo No. 70

TREE NO. 1667

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	123.8	186.2	144.4
Average length of needles in inches	6.87	7.80	7.43
Average diameter of needle bundle in mm.	1.80	1.87	1.75
Average diameter of twigs in cm.	1.28	1.48	1.38
Average annual twig growth in inches, 1917-41	.65	.84	.64
Average annual radial stem growth in inches, 1912-1941	.0199	.0369	.0221

Total age at stump 268 Foliage injury in percent _____

DBH 30" Height 107'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 3 Keen Class 3A

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical Crown Width wide Top Shape rounded

Appearance good Needle Color light

Crown Density: Top dense Mid dense

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: Heavy squirrel and tip moth damage to terminals

Photo no. 75

TREE NO. 1677

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	240.4	226.4	184.2
Average length of needles in inches	6.51	6.87	6.03
Average diameter of needle bundle in mm.	1.93	1.89	1.86
Average diameter of twigs in cm.	1.63	1.30	1.25
Average annual twig growth in inches, 1917-41	.81	.62	.62
Average annual radial stem growth in inches, 1912-1941	.0090	.0120	.0099

Total age at stump 351 Foliage injury in percent _____

DBH 24" Height 95'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5 Keen Class 4C

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry symmetrical Crown Width wide Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top dense Mid medium

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: _____

Photo No. 83

TREE NO. 1652

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	205.2	162.6	150.6
Average length of needles in inches	5.79	5.78	5.76
Average diameter of needle bundle in mm.	1.74	1.65	1.55
Average diameter of twigs in cm.	1.51	1.15	1.05
Average annual twig growth in inches, 1917-41	.64	.41	.44
Average annual radial stem growth in inches, 1912-1941	—	.0162	.0121

Total age at stump 268 Foliage injury in percent _____

DBH 26" Height 89.5'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 3 Keen Class 3B

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

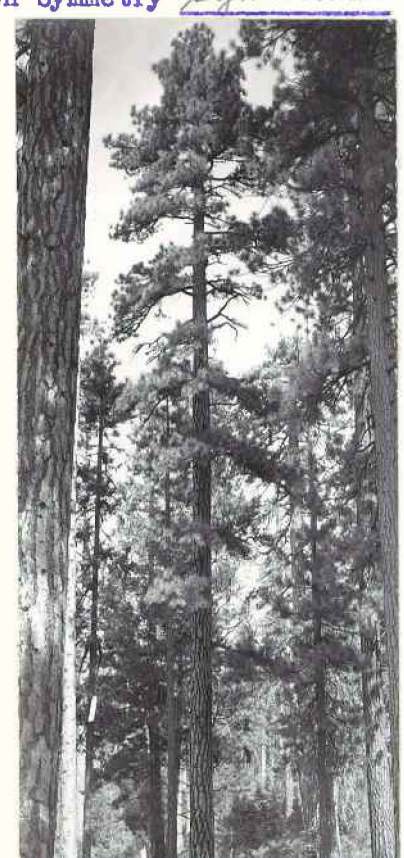


Photo no 65

Appearance excellent Needle Color dark

Crown Density: Top medium Mid medium

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: _____

TREE NO. 1692

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	202.2	197.6	183.8
Average length of needles in inches	5.94	6.20	6.40
Average diameter of needle bundle in mm.	1.74	1.73	1.71
Average diameter of twigs in cm.	1.30	1.31	1.25
Average annual twig growth in inches, 1917-41	.67	.72	.74
Average annual radial stem growth in inches, 1912-1941	.0148	.0169	.0088

Total age at stump 355 Foliage injury in percent _____

DBH. 36" Height 124' Crown Length 94'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

Appearance good Needle Color light

Crown Density: Top dense Mid dense

Needle Length: Top long Mid long

Twig Injury light Branch Injury light

Remarks: _____

Photo No. 68

W 68

TREE NO. 1697

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	181.2	209.0	207.7
Average length of needles in inches	5.66	6.27	6.43
Average diameter of needle bundle in mm.	1.79	1.77	1.77
Average diameter of twigs in cm.	1.27	1.32	1.37
Average annual twig growth in inches, 1917-41	.81	.62	.62
Average annual radial stem growth in inches, 1912-1941	.0118	.0184	.0113

Total age at stump 356 Foliage injury in percent _____

DBH 32" Height 117'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top medium Mid medium

Needle Length: Top long Mid long

Twig Injury light Branch Injury none

Remarks: _____

Photo No. 82

TREE NO. 1703

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	233.2	139.2	137.8
Average length of needles in inches	6.41	6.20	6.33
Average diameter of needle bundle in mm.	2.01	1.93	1.91
Average diameter of twigs in cm.	1.71	1.26	1.25
Average annual twig growth in inches, 1917-41	1.00	.64	.66
Average annual radial stem growth in inches, 1912-1941	.0140	.0143	.0050

Total age at stump 347 Foliage injury in percent _____

DBH 24" Height 83' Crown Length 53'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1 Dunning Class 5 Keen Class 4c

Dominance dominant Age overmature Crown Length ½

Crown Symmetry ~~symmetrical~~ irregular Crown Width medium Top Shape flat

Appearance excellent Needle Color dark

Crown Density: Top dense Mid dense

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: _____

Photo No. 69

W69

TREE NO. Risk 2 (average)

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	181.8	170.5	—
Average length of needles in inches	5.84	6.13	—
Average diameter of needle bundle in mm.	1.85	1.81	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class _____ Dunning Class _____ Keen Class _____

Dominance _____ Age _____ Crown Length _____

Crown Symmetry _____ Crown Width _____ Top Shape _____

Appearance _____ Needle Color _____

Crown Density: Top _____ Mid _____

Needle Length: Top _____ Mid _____

Twig Injury _____ Branch Injury _____

Remarks: _____

TREE NO. 1036

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	177.9	179.0	—
Average length of needles in inches	6.10	6.34	—
Average diameter of needle bundle in mm.	1.83	1.90	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 24 Height 88' Length Crown 60'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5 Keen Class 4B

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry symmetrical & irregular Crown Width narrow Top Shape flat

Appearance good Needle Color dark

Crown Density: Top dense to medium Mid dense to medium

Needle Length: Top long to medium Mid long

Twig Injury light Branch Injury light

Remarks: _____

TREE NO. 1037

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	174.6	146.0	—
Average length of needles in inches	6.73	7.22	—
Average diameter of needle bundle in mm.	1.87	1.85	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 22" Height 95' Crown Length 20'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 3 Keen Class 3B

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape pointed

Appearance good to fair Needle Color dark

Crown Density: Top thin Mid dense

Needle Length: Top medium Mid long

Twig Injury light Branch Injury light

Remarks: _____

TREE NO. 1064

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	248.2	191.6	—
Average length of needles in inches	7.33	7.20	—
Average diameter of needle bundle in mm.	2.03	1.93	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 20 Height 84' Crown Length 71'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5 Keen Class 4C

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry one sided irregular Crown Width medium Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top dense medium Mid dense

Needle Length: Top long Mid long

Twig Injury none Branch Injury moderate

Remarks: _____

TREE NO. 1070

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	240.0	207.2	—
Average length of needles in inches	6.21	6.30	—
Average diameter of needle bundle in mm.	1.75	1.70	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 15.5 Height 78.5' Crown Length 62.5'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 7 Keen Class 4 D

Dominance suppressed Age over-mature Crown Length 3/4

Crown Symmetry one-sided Crown Width narrow Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top dense Mid dense

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: _____

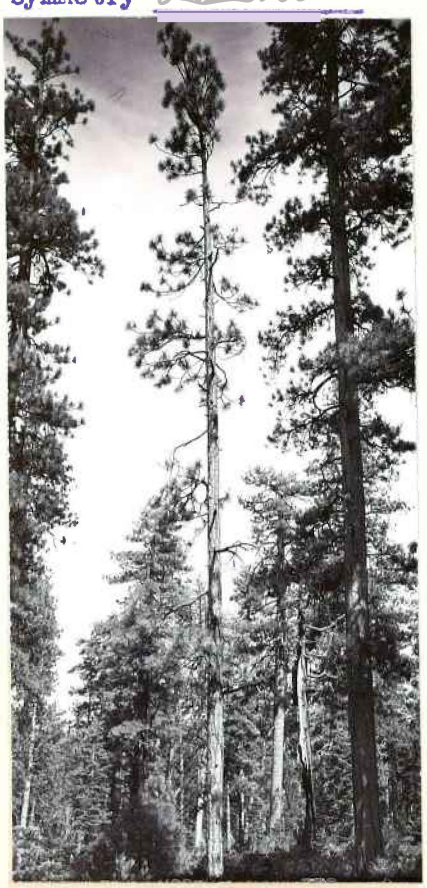


Photo No. 64

TREE NO. 1022

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	220.0	162.8	—
Average length of needles in inches	5.48	5.08	—
Average diameter of needle bundle in mm.	1.80	1.67	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 20" Height 93' Crown Length 51'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5 Keen Class 4C

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

Appearance good Needle Color light

Crown Density: Top dense Mid medium

Needle Length: Top medium to long Mid medium

Twig Injury light Branch Injury light

Remarks: _____

TREE NO. 1137

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	199.0	108.2	—
Average length of needles in inches	6.44	5.96	—
Average diameter of needle bundle in mm.	1.98	1.72	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 18" Height 94' Crown Length 68'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 4 Keen Class 3 B

Dominance codominant Age mature Crown Length 1/2

Crown Symmetry symmetrical Crown Width narrow Top Shape pointed

Photo No. 78

Appearance good Needle Color dark

Crown Density: Top dense Mid medium

Needle Length: Top long Mid medium

Twig Injury light Branch Injury none

Remarks: _____

TREE NO. 1148

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	155.2	152.2	—
Average length of needles in inches	6.01	5.56	—
Average diameter of needle bundle in mm.	1.72	1.60	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 42" Height 115' Crown Length 78'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical Crown Width wide Top Shape flat

Appearance good Needle Color dark

Crown Density: Top medium Mid dense

Needle Length: Top long Mid long

Twig Injury moderate Branch Injury moderate

Remarks: _____

Photo No 76

TREE NO. 1280

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	267.2	240 0	—
Average length of needles in inches	6.17	6.43	—
Average diameter of needle bundle in mm.	1.80	1.75	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 30 Height 114' Crown Length 89'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 3 Keen Class 3A

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top medium Mid dense to medium

Needle Length: Top medium Mid long

Twig Injury light Branch Injury light

Remarks: _____

Photo No. 81

TREE NO. 1492

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	171.4	134.0	—
Average length of needles in inches	6.23	6.30	—
Average diameter of needle bundle in mm.	2.10	2.12	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 34" Height 100' Crown Length 60'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5 Keen Class 4B

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry symmetrical Crown Width wide Top Shape flat

Appearance good Needle Color light

Crown Density: Top dense Mid medium

Needle Length: Top long Mid long

Twig Injury light Branch Injury moderate

Remarks: _____

Photo No 72

TREE NO. 1503

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	158.4	147.6	—
Average length of needles in inches	6.00	6.35	—
Average diameter of needle bundle in mm.	1.83	1.77	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 22" Height 103' Crown Length 79'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 3 Keen Class 3B

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

Appearance good Needle Color light

Crown Density: Top dense Mid medium

Needle Length: Top long Mid long

Twig Injury none Branch Injury none

Remarks: _____

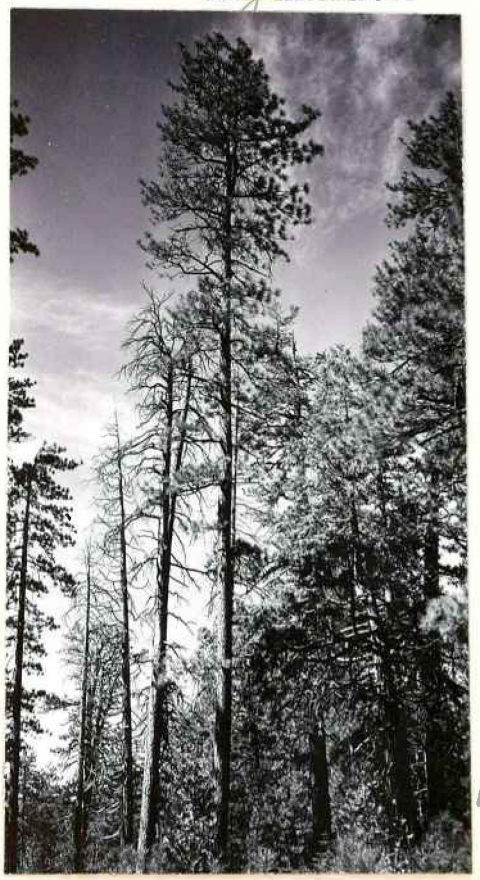


Photo No 71

TREE NO. 1615

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	219.2	227.6	—
Average length of needles in inches	5.76	6.81	—
Average diameter of needle bundle in mm.	1.90	1.97	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 28" Height 111' Crown Length 87'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5 Keen Class 4B

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical & irregular Crown Width medium Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top dense Mid medium

Needle Length: Top long Mid long

Twig Injury light Branch Injury light

Remarks: _____

TREE NO. 1632

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	132.2	135.0	—
Average length of needles in inches	5.76	6.19	—
Average diameter of needle bundle in mm.	1.85	1.78	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 36" Height 104' Crown Length 75'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape flat

Appearance good Needle Color light

Crown Density: Top medium Mid medium

Needle Length: Top medium Mid medium

Twig Injury light Branch Injury light

Remarks: _____

Photo No 63

TREE NO. 1645

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	114.0	166.6	—
Average length of needles in inches	4.35	6.14	—
Average diameter of needle bundle in mm.	1.60	1.63	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 22" Height 80' Crown length 60'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 4 Keen Class 3B

Dominance codominant Age mature Crown Length 3/4

Crown Symmetry onesided Crown Width medium Top Shape rounded

Appearance good Needle Color light

Crown Density: Top medium Mid medium

Needle Length: Top medium Mid medium

Twig Injury light Branch Injury light

Remarks: _____

TREE NO. 1675

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	152.4	164.8	—
Average length of needles in inches	5.07	5.51	—
Average diameter of needle bundle in mm.	1.78	1.78	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 34" Height 94' Crown Length 49'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5 Keen Class 4B

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry symmetrical Crown Width wide Top Shape flat

Appearance good Needle Color dark

Crown Density: Top medium Mid medium

Needle Length: Top medium Mid medium

Twig Injury light Branch Injury none

Remarks: _____

TREE NO. 1698

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	148.8	153.4	—
Average length of needles in inches	5.55	5.10	—
Average diameter of needle bundle in mm.	2.02	2.00	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 22" Height 102' Crown Length 68'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5 Keen Class 4C

Dominance dominant Age overmature Crown Length 1/2

Crown Symmetry symmetrical to one side Crown Width medium Top Shape flat

Appearance good Needle Color dark

Crown Density: Top medium Mid medium to dense

Needle Length: Top long Mid long

Twig Injury light Branch Injury light

Remarks: _____

TREE NO. 1710

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	203.4	206.8	—
Average length of needles in inches	5.33	5.84	—
Average diameter of needle bundle in mm.	1.72	1.73	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 32 Height 104' Crown Length 70'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5 Keen Class 4B

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry asymmetrical Crown Width medium Top Shape rounded

Appearance good to fair Needle Color light

Crown Density: Top thin Mid medium to thin

Needle Length: Top medium to short Mid medium to short

Twig Injury moderate Branch Injury moderate

Remarks: _____

TREE NO. 1711

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	109.2	175.6	—
Average length of needles in inches	4.82	5.84	—
Average diameter of needle bundle in mm.	1.83	1.83	—
Average diameter of twigs in cm.			
Average annual twig growth in inches, 1917-41			
Average annual radial stem growth in inches, 1912-1941			

Total age at stump _____ Foliage injury in percent _____

DBH 32" Height 104' Crown Length 76'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 2 Dunning Class 5A Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry symmetrical to irregular Crown Width medium Top Shape flat

Appearance fair to poor Needle Color yellow

Crown Density: Top thin Mid thin to medium

Needle Length: Top short Mid medium to short

Twig Injury moderate to severe Branch Injury moderate to severe

Remarks: a poor tree

Average

TREE NO. Risk 4

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	119.1	108.8	—
Average length of needles in inches	4.91	4.96	—
Average diameter of needle bundle in mm.	1.80	1.76	—
Average diameter of twigs in cm.	1.23	1.10	—
Average annual twig growth in inches, 1917-41	.58	.57	—
Average annual radial stem growth in inches, 1912-1941	.0105	.0112	.0126

Total age at stump _____ Foliage injury in percent _____

D.B.H. _____ Total Height _____

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class _____ Dunning Class _____ Keen Class _____

Dominance _____ Age _____ Crown Length _____

Crown Symmetry _____ Crown Width _____ Top Shape _____

Appearance _____ Needle Color _____

Crown Density: Top _____ Mid _____

Needle Length: Top _____ Mid _____

Twig Injury _____ Branch Injury _____

Remarks: _____

TREE NO. 1

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	80.4	57.2	53.4
Average length of needles in inches	4.97	4.82	5.11
Average diameter of needle bundle in mm.	—	—	—
Average diameter of twigs in cm.	.99	.90	.88
Average annual twig growth in inches, 1917-41	.37	.32	.35
Average annual radial stem growth in inches, 1912-1941	.0124	.0148	.0182

Total age at stump 561 Foliage injury in percent _____

D.B.H. 37" Total Height 114

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 3 Dunning Class 5 Keen Class 4B C

Dominance dominant Age overmature Crown Length ½

Crown Symmetry irregular Crown Width medium Top Shape rounded

Appearance good Needle Color dark

Crown Density: Top dense Mid dense

Needle Length: Top medium Mid medium

Twig Injury light Branch Injury light

Remarks: above classification made on Sept. 13, 1939. Tree was attacked fall of 1940 & June 5 1941. D.B. Limbs and trunk less evergreen up to 95' except on north side of tree in which D.M. was present. Ips and miscellaneous insects in portion above 95'.

Circumference of stump 13' nine feet of which killed by fire.

Photo No 1

TREE NO. 2

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	70.2	79.4	109.0
Average length of needles in inches	5.05	5.17	5.55
Average diameter of needle bundle in mm.	1.70	1.95	1.95
Average diameter of twigs in cm.	1.11	1.16	1.15
Average annual twig growth in inches, 1917-41	.49	.58	.76
Average annual radial stem growth in inches, 1912-1941	.0097	.0112	.0228

Total age at stump 336 Foliage injury in percent

DBH 35" Total Height 105' Crown Length 75'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class 4B C

Dominance dom't Age overmature Crown Length 3/4

Crown Symmetry irregular Crown Width wide Top Shape rounded

Photo 710 5

Appearance poor Needle Color

Crown Density: Top thin Mid medium

Needle Length: Top short Mid medium

Twig Injury severe Branch Injury severe

Remarks: June 20, 1941. Light attack by D. brevicomis 0 to 32' & filled in with Ips engraver above 32' over entire flat top. Tree attacked 1940

W9

TREE NO. 3

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	87.9	80.5	77.8
Average length of needles in inches	5.53	5.50	5.80
Average diameter of needle bundle in mm.	1.82	1.76	1.75
Average diameter of twigs in cm.	1.12	1.09	0.95
Average annual twig growth in inches, 1917-41	.56	.56	.48
Average annual radial stem growth in inches, 1912-1941	—	.0094	.0143

Total age at stump 176 rings plus heart rot Foliage injury in percent _____

BBH. 19" Total Height 90' Crown Length 20'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 4 Keen Class 3C D

Dominance Codominant Age mature Crown Length 1/4

Crown Symmetry irregular Crown Width narrow Top Shape rounded

Appearance poor Needle Color light

Crown Density: Top thin Mid thin

Needle Length: Top short Mid short

Twig Injury severe Branch Injury severe

Photo No 11

Remarks: a 1940 w tree. on June 20, 1941 a few D. V mature larvae in base (0 to 15') also growing stage of pupae. D. m. mature larvae and pupae 2' to 15'. above 15' phloem was green with no insects present.

One fourth of stump circumference killed by fire over 150 years ago. Heart rot present up to 8' feet.

W11

2

TREE NO. 74

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	189.0	232.3	~~1092.0~~
Average length of needles in inches	5.30 ~~5.05~~	5.72	—
Average diameter of needle bundle in mm.	1.83	1.82	—
Average diameter of twigs in cm.	1.24	1.32	—
Average annual twig growth in inches, 1917-41	.58	.65	—
Average annual radial stem growth in inches, 1912-1941	.0087	.0050	.0058

Total age at stump 367 Foliage injury in percent _____

DBH 25" Total Height 88'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class 4C

Dominance dominant Age overmature Crown Length 1/3

Crown Symmetry _____ Crown Width narrow Top Shape flat

Appearance poor Needle Color ✓

Crown Density: Top thin Mid thin

Needle Length: Top medium Mid medium

Twig Injury light Branch Injury light

Remarks: marked risk 4 because of small crown area and small complement.

Aug 13, 1941. D valens large brown larvae to 3' D. monticolae small larvae and parent adults up to 26' on north side. Incipient ~~infestation~~ becoming successful on south side ~~from~~ to 1' Top. Above 26' on north side phloem green with no insects.

Photo no 57

Photo no. 56

TREE NO. 5

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	210.8	197.6	—
Average length of needles in inches	5.18	5.02	—
Average diameter of needle bundle in mm.	1.84	1.81	—
Average diameter of twigs in cm.	1.36	1.27	—
Average annual twig growth in inches, 1917-41	.87	.92	—
Average annual radial stem growth in inches, 1912-1941	.0054	.0122 ~~.0117~~	.0101

Total age at stump 435 Foliage injury in percent _____

DBH 30" Total Height _____

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class 4C

Dominance dominant Age overmature Crown Length 1/3

Crown Symmetry one sided Crown Width medium Top Shape flat

Appearance poor Needle Color ✓

Crown Density: Top thin Mid thin

Needle Length: Top med to short Mid med to short

Twig Injury moderate Branch Injury moderate

Remarks: August 13, 1941. D. valens larvae and parent adults in burr up to 4 feet; 4' to 40' D. b. attacking, egg and small larvae; 40 to 60' flattened fast growing and D.b. attacking.

Photo No 58

Photo No 59

TREE NO. 15

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	127.0	78.4	153.4
Average length of needles in inches	4.70	4.43	5.35
Average diameter of needle bundle in mm.	1.88	1.75	1.98
Average diameter of twigs in cm.	1.22	1.01	1.41
Average annual twig growth in inches, 1917-41	.50	.42	1.02
Average annual radial stem growth in inches, 1912-1941	.0106	.0151	.0165

Total age at stump 259 Foliage injury in percent _____

DBH 30 Total Height _____

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 3 Keen Class 3B

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical to irregular Crown Width narrow Top Shape pointed

Appearance poor Needle Color light

Crown Density: Top medium Mid thin

Needle Length: Top short Mid short

Twig Injury moderate Branch Injury light to moderate

Remarks: one old flatheaded inexpert gallery found near butt. Lower crown heavily infected with mistletoe.

Photo no 13

photo no 14

TREE NO. 36

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	100.6	100.8	82.2
Average length of needles in inches	4.20	4.60	3.97
Average diameter of needle bundle in mm.	1.93	1.84	1.77
Average diameter of twigs in cm.	1.21	1.02	.94
Average annual twig growth in inches, 1917-41	.48	.44	.45
Average annual radial stem growth in inches, 1912-1941	.0088	.0066	.0057

Total age at stump 328 Foliage injury in percent _____

DBH 24 Total Height _____

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 4 Keen Class 3C

Dominance Cod. Age Mature Crown Length 3/4

Crown Symmetry One sided Crown Width med-narrow Top Shape Rounded

Photo No 16

Photo No 46

Appearance Fair Needle Color Dark

Crown Density: Top med Mid Thin

Needle Length: Top short Mid short

Twig Injury light Branch Injury light

Remarks: no flattends.

W16

TREE NO. 39

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	249.4	187.6	178.1
Average length of needles in inches	5.13	5.13	5.20
Average diameter of needle bundle in mm.	2.16	1.93	1.73
Average diameter of twigs in cm.	1.69	1.29	1.11
Average annual twig growth in inches, 1917-41	1.11	.80	.69
Average annual radial stem growth in inches, 1912-1941	.0116	.0073	.0089

Total age at stump 327 Foliage injury in percent _____

DBH. 26 Total Height _____

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class 4C

Dominance codo Age overmature Crown Length 1/4

Crown Symmetry irregular Crown Width narrow Top Shape flat

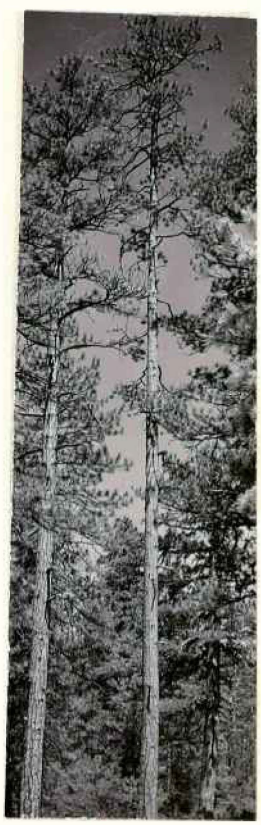


Photo no 45 Photo no 15

Appearance poor Needle Color dark

Crown Density: Top thin Mid thin

Needle Length: Top long Mid long

Twig Injury moderate Branch Injury light

Remarks: needle cast ~~&~~ full
only few tufts crown
(no flatheads obs. Esm.

TREE NO. 51

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	~~126.2~~ 92.0	126.2	—
Average length of needles in inches	4.33	5.00	—
Average diameter of needle bundle in mm.	1.70	1.80	—
Average diameter of twigs in cm.	1.15	1.08	—
Average annual twig growth in inches, 1917-41	.47	.69	—
Average annual radial stem growth in inches, 1912-1941	.0065	.0087	.0205

Total age at stump 387 Foliage injury in percent _____

DBH. 24 Total Height 106'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class 4C

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry irregular Crown Width narrow Top Shape rounded

Appearance poor Needle Color top light yellow green

Crown Density: Top thin Mid medium

Needle Length: Top short Mid medium

Twig Injury severe Branch Injury moderate

Remarks: Tree marked as high risk because of top 1/2 to 1/3 of crown extremely thin. There is considerable twig and branch injury for 15 feet immediately below top. Flatheads heavy in upper half of south side, success 0 to 1.

photo no 37

photo no 38

TREE NO. 71

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	94.8	79.8	—
Average length of needles in inches	4.57	3.94	—
Average diameter of needle bundle in mm.	1.72	1.68	—
Average diameter of twigs in cm.	1.03	.95	—
Average annual twig growth in inches, 1917-41	.47	.61	—
Average annual radial stem growth in inches, 1912-1941	.0069	.0108	.0093

Total age at stump 330 Foliage injury in percent _____

DBH 30 Total Height 102'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 3 Keen Class 3A (4A)

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape pointed

Appearance poor Needle Color light

Crown Density: Top medium Mid thin

Needle Length: Top medium Mid medium to short

Twig Injury severe Branch Injury moderate

Remarks: Reduced complement and short needles throughout crown coupled with much old branch injury and current twig loss rates this a Rank 4 tree. Lower 2/3 of crown badly deformed by mistletoe.

Plot No. 41

Plot No #2

W-11

TREE NO. 87

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	167.2	66.4	65.8
Average length of needles in inches	4.34	3.67	3.92
Average diameter of needle bundle in mm.	1.70	1.53	1.54
Average diameter of twigs in cm.	1.29	.95	.84
Average annual twig growth in inches, 1917-41	.62	.42	.37
Average annual radial stem growth in inches, 1912-1941	.0130	.0165	.0123

Total age at stump 234 Foliage injury in percent _____

DBH 26 Total Height 100

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 1 Keen Class 2A

Dominance dominant Age immature Crown Length 3/4

Crown Symmetry symmetrical Crown Width wide Top Shape pointed

Appearance poor Needle Color top dark mid light

Crown Density: Top medium Mid thin

Needle Length: Top medium Mid short

Twig Injury severe Branch Injury moderate

Remarks: marked risk 4 because of extreme decadence of crown except in very top. 90 percent of crown below top with very short needles and very reduced complement. Hypodermella not considered involved by Wagner.

Photo no 35

Photo No. 36

TREE NO. 93

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	65.8	80.8	69.2
Average length of needles in inches	4.82	5.84	5.36
Average diameter of needle bundle in mm.	1.62	1.66	1.77
Average diameter of twigs in cm.	1.31	.88	.96
Average annual twig growth in inches, 1917-41	.57	.58	.54
Average annual radial stem growth in inches, 1912-1941	.0142	.0162	.0101

Total age at stump 270 Foliage injury in percent _____

DBH 24 Total Height 94

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 3 Keen Class 3A

Dominance dominant Age mature Crown Length 3/4

Crown Symmetry symmetrical Crown Width medium Top Shape rounded

Appearance poor Needle Color light

Crown Density: Top thin Mid thin

Needle Length: Top short Mid short

Twig Injury light Branch Injury light

Remarks: Tree marked as risk 4 because of extremely reduced complement. Needles not to short, mostly short. Wide crown spreading distorted. Crown composed of many twigs and branches all of small diameter.

Hypodermella appears to have taken off the '36, '37 and some of '38 needles and has contributed to the thin complement according to Dr. Wagner.

Photo No. 23

Photo No. 32

TREE NO. 98

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	136.2	92.6	—
Average length of needles in inches	5.24	3.45	—
Average diameter of needle bundle in mm.	1.76	1.65	—
Average diameter of twigs in cm.	1.26	1.25	—
Average annual twig growth in inches, 1917-41	.78	.74	—
Average annual radial stem growth in inches, 1912-1941	.0223	.0097	.0062

Total age at stump 544 Foliage injury in percent _____

DBH 30 Total Height 87

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class 4C

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry irregular, sparse limbs Crown Width medium Top Shape flat

Appearance poor Needle Color light

Crown Density: Top thin Mid thin

Needle Length: Top short Mid short

Twig Injury severe Branch Injury moderate

Remarks: Tree marked as risk 4 because small complement of needles & sparse crown. Branch twig injury appears to be old.

Photo No 21

Photo No 22

TREE NO. 99

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	90.0	88.6	—
Average length of needles in inches	5.48	4.67	—
Average diameter of needle bundle in mm.	1.87	1.75	—
Average diameter of twigs in cm.	1.27	1.11	—
Average annual twig growth in inches, 1917-41	.54	.49	—
Average annual radial stem growth in inches, 1912-1941	—	.0092	.0153

Total age at stump 275 Foliage injury in percent _____

DBH. 28 Total Height 108'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class C- 4B

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry one sided Crown Width narrow Top Shape rounded

Photo no 19

Photo no 20

Appearance poor Needle Color light

Crown Density: Top thin Mid thin

Needle Length: Top short Mid medium

Twig Injury severe Branch Injury severe

Remarks: Tree marked because of badly deteriorated crown. Needle complement small throughout, worst in top. Much current flagging in upper half crown and below dead topfall. Needle complement and needle length appear a little better in mid and lower crown.

TREE NO. 131

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	104.6	145.2	—
Average length of needles in inches	4.48	5.70	—
Average diameter of needle bundle in mm.	1.70	1.68	—
Average diameter of twigs in cm.	1.29	1.25	—
Average annual twig growth in inches, 1917-41	.58	.61	—
Average annual radial stem growth in inches, 1912-1941	.0094	.0138	0103

Total age at stump 476 Foliage injury in percent _____

DBH. 36 Total Height 118

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class 4A

Dominance dominant Age overmature Crown Length 3/4

Crown Symmetry asymmetrical Crown Width wide Top Shape rounded

Appearance poor Needle Color light yellow

Crown Density: Top medium to thin Mid thin

Needle Length: Top medium Mid medium to long

Twig Injury moderate Branch Injury light

Photo No 34

Remarks: Tree marked as high risk on basis of thinning of needle complement. Crook and twig injury appear to be rather recent but no needles remain on dead twigs.

Living flathead augerers to very light. Beaver hole above 10" diameter. One old unsuccessful attack in mid bole.

TREE NO. 736 ~~768~~

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	77.8	88.4	90.2
Average length of needles in inches	6.14	6.14	6.08
Average diameter of needle bundle in mm.	1.95	1.98	1.90
Average diameter of twigs in cm.	1.29	1.26	1.24
Average annual twig growth in inches, 1917-41	.50	.55	.62
Average annual radial stem growth in inches, 1912-1941	.0074	.0117	.0077

Total age at stump 524 Foliage injury in percent _____

DBH 31.7 Total Height _____

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 1938 - 2, 1939 - 3, 1941 - 4 Dunning Class 5 Keen Class 4C

Dominance dom. Age overmature Crown Length 1/2

Crown Symmetry irregular Crown Width medium Top Shape rounded

Appearance 1938 - fair, 1939 - good, 1941 - poor Needle Color 1938 - light, 1939 - light, 1941 - yellow

Crown Density: Top 1938 - medium, 1939 - thin, 1941 - thin Mid 1938 - thin, 1939 - thin, 1941 - thin

Needle Length: Top 1938 - long, 1939 - med., 1941 - medium Mid 1938 - medium, 1939 - medium, 1941 - medium

Twig Injury 1938 - moderate, 1939 - " , 1941 - " Branch Injury 1938 - moderate, 1939 - moderate, 1941 - moderate

Remarks: (See analysis sheet)

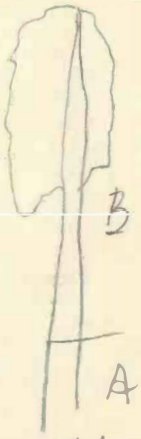
Photo No. 88

Tree No 236

TREE ANALYSIS - SUSCEPTIBILITY PROJECT - BLACK'S MOUNTAIN EXPERIMENTAL FOREST 41W-25-4

T[redacted] Sp: PP | Keen: 4C | FH Intensity | FH Success | Compartment No 38 - 2
Dia: 32' | Dunning: 5 | 1 | 1 | Date Felled: 10/23/41
Vol: 1464 | Suscep: | 2 | 2 | Date Examined: 10/23/41
felled 10/23/41 | 3 | 3 | Examiner: [illegible]

Sec No.	Diam Base	Ht	Bark Area	Diam Top	Insects	Remarks
A		47'		2.3	Dm. 1941 W Pa and eggs - Rarely attacks	Tree not freely attacked as yet
					FH 1941 W LO ¼, ¼-½ very heavy	all attacks resulting from successful inspects
B	2.3	62'		3	FH - 1941 W was in Sec A very heavy	inspect attack at nearly all attacks becoming successful.
					Sequence: FH - Dm.	
Bee damage in resin chambers					note: It is my belief that this tree has deteriorated	as a result of FH attacks, which during 1941 started successful and fast growing, as several
note: This has been attacked by Dm and rating your:					the heaviest FH inspects were found in the top of	the lower bole mostly green. Dm has just recently attacked the lower bole. D valleys on lower 5' of bole NE side were potentially successful during winter to release FH.



Sketch

provided the trees are a

SUSCEPTIBILITY PROJECT - BLACK'S MOUNTAIN EXPERIMENTAL FOREST

Tree Number Compartment No. Date of Obser.

DOMINANCE	AGE	CROWN LENGTH	CROWN SYMMETRY	CROWN WIDTH	TOP SHAPE
Dom ____	Young ____	1/4 ____	Symmetrical ____	Wide ____	Pointed ____
Cod. ____	Immat. ____	1/2 ____	Onesided ____	Medium ____	Rounded ____
Int. ____	Mature ____	3/4 ____	Irregular ____	Narrow ____	Flat ____
Sup. ____	O'r Mat. ____				

APPEARANCE	CROWN DENSITY		NEEDLE LENGTH		NEEDLE COLOR
	Top:	Mid-Crown	Top:	Mid-Crown	(Green)
Excellent	Dense ____	Dense ____	Long ____	Long ____	Dark ____
Good ____	Medium ____	Medium ____	Medium ____	Medium ____	Light ____
Fair ____	Thin ____	Thin ____	Short ____	Short ____	Yellow ____
Poor ____					

TWIG INJURY	BRANCH INJURY	% TOP-KILLED
None ____	None ____	Current ____
Light ____	Light ____	Old ____
Moderate ____	Moderate ____	
Severe ____	Severe ____	

REMARKS ____

(Record place in crown of apparent weakness and predict presence or absence of FH incipients)

TREE NO. 1142

MEASUREMENTS TAKEN AFTER TREE WAS FELLED

MEASUREMENT	TOP	MID	BASE
Total number of needle fascicles per twig	80.4	67.4	73.6
Average length of needles in inches	4.07	3.86	4.08
Average diameter of needle bundle in mm.	1.62	1.60	1.52
Average diameter of twigs in cm.	1.15	0.91	0.79
Average annual twig growth in inches, 1917-41	.40	.33	.29
Average annual radial stem growth in inches, 1912-1941	—	.0119	.0199

Total age at stump 330 Foliage injury in percent _____

DBH 36" Height 101' Crown Length 85'

CLASSIFICATION OF CHARACTERS BEFORE TREE WAS FELLED

Risk Class 4 Dunning Class 5 Keen Class 4B

Dominance Dom Age over mature Crown Length 3/4

Crown Symmetry one side - symmetrical Crown Width Med Top Shape rounded

Appearance good Needle Color light

Crown Density: Top thin Mid thin

Needle Length: Top short Mid short

Twig Injury moderate Branch Injury light

Remarks: _____

Photo no. 77

W77